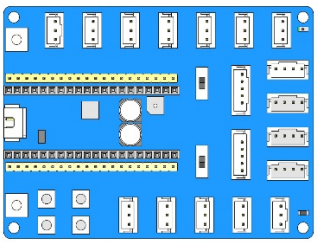
Lesson 8 How to using LCD1602 display characters

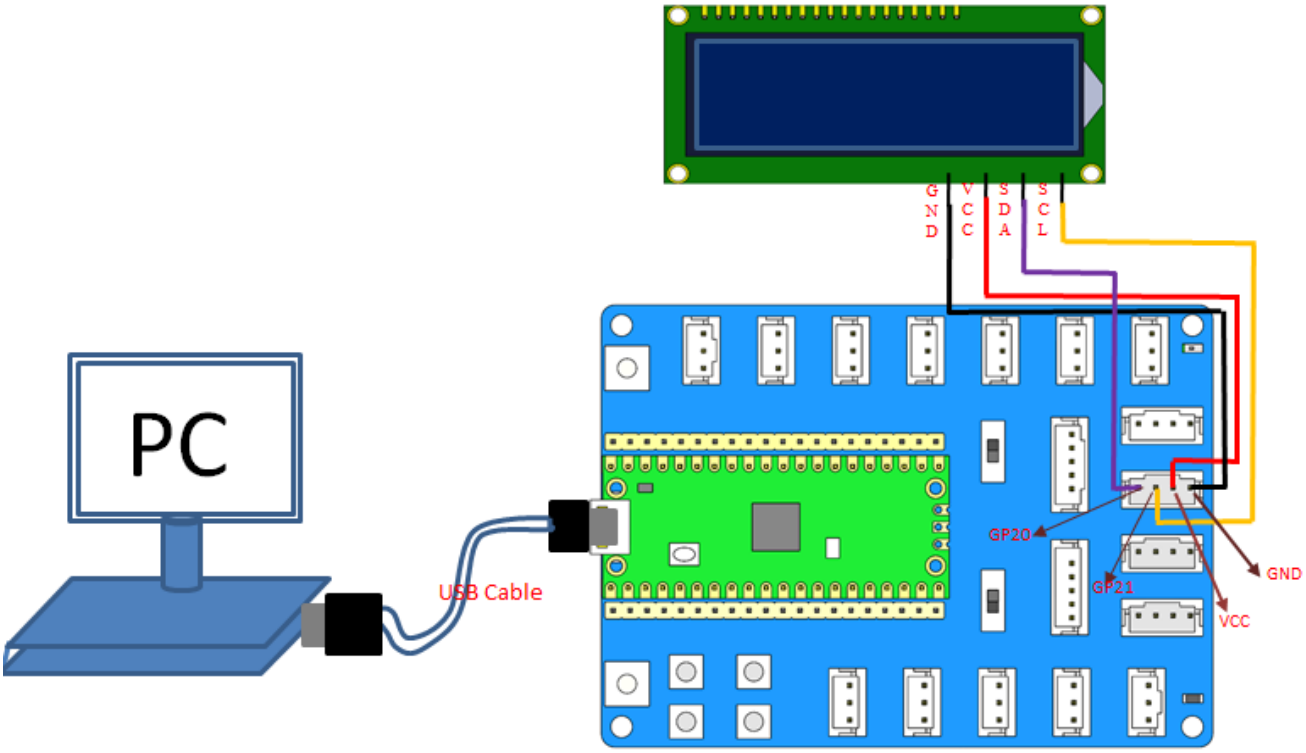
In this lesson, we will learn how to use the LCD 1602 to display characters.

8.1 Components & Parts

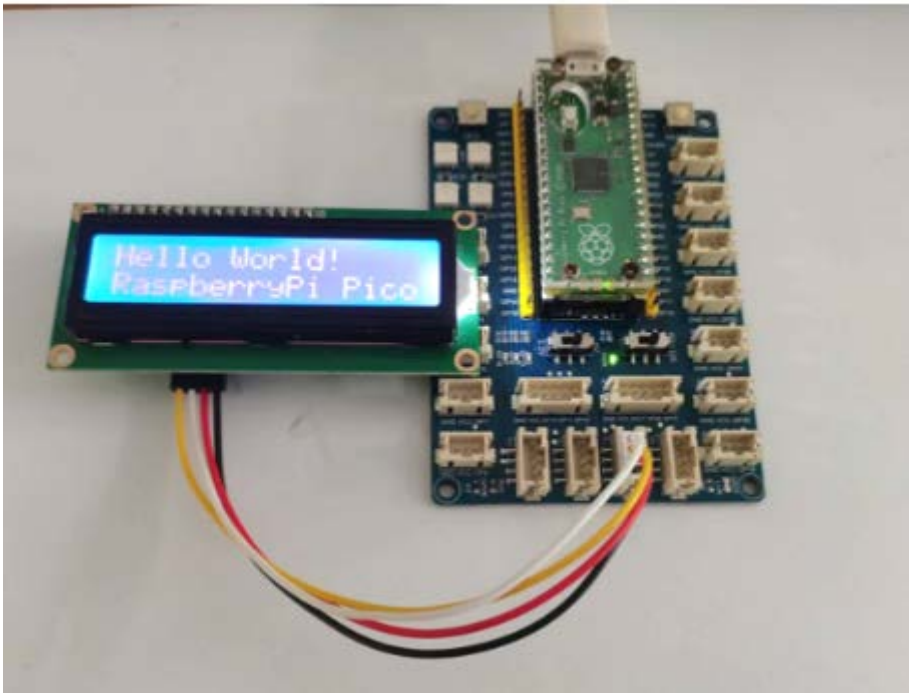
Components	Quantity	Picture	Remark
Raspberry Pi Pico	1		
USB Cable	1		
Pico Expansion board	1		
LCD1602 Display Module	1		Not included in the Kit, you can prepared by yourself
4-Pin wires	1		

8.2 Connection diagram

The LCD1602 module needs to be connected to the 4PIN port on the Pico Expansion board.In this lesson,we defined sda=Pin(20),scl=Pin(21).The hardware circuit like below.



Note:the3.3V/5V switch should turn to 5V side

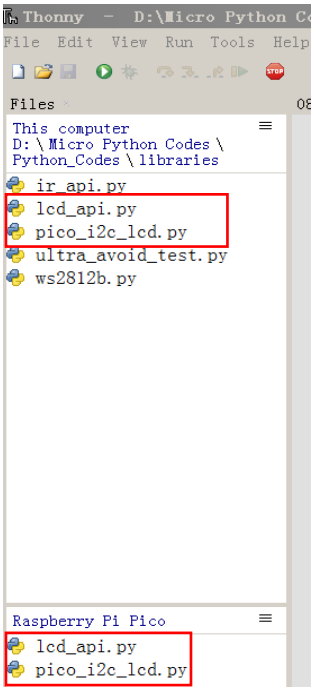


8.3 Run the program

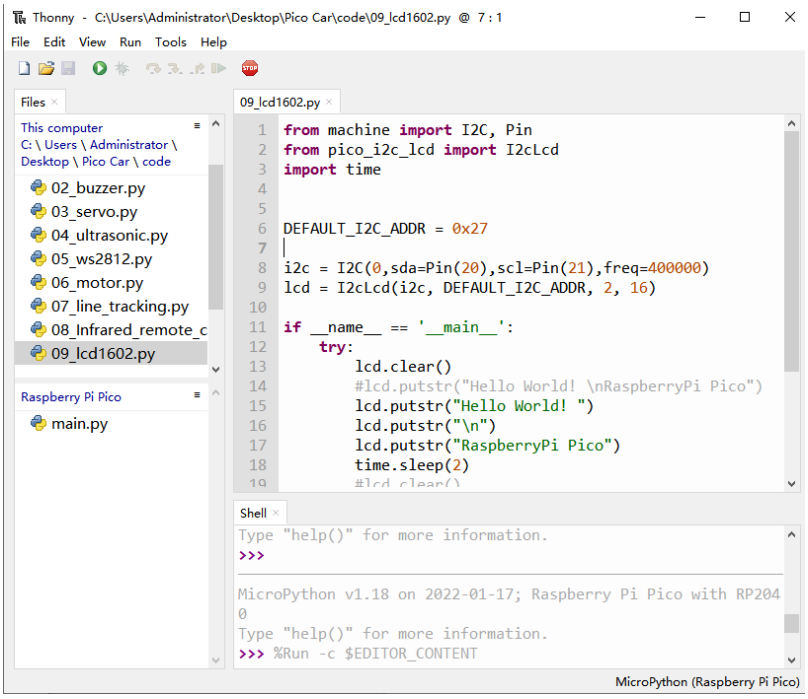
1. Upload the library files required by the module to the Raspberry Pi Pico.

Enter the libraries file to find the "pico_i2c_lcd.py" file, right-click, select "upload to/", and upload the "pico_i2c_lcd.py" file to Pico.

Find the "lcd_api.py" file, right-click, select "upload to/", and upload the "lcd_api.py" file to Pico.



2. Double-click the code "08_lcd1602.py" required for this course. The content of the code will be displayed in the interface on the right.



3. Click the Run button to run the program. The LCD1602 module will display "Hello World! RaspberryPi Pico".

Note: If the characters do not appear on the LCD, try turning the back potentiometer (blue knob) for contrast adjustment.

If the program runs and reports an error, please try to reconnect the LCD1602 module.

4. Click the Stop button to stop the program.

8.4 Code

08_lcd1602.py

```
1.  from machine import I2C, Pin
2.  from pico_i2c_lcd import I2cLcd
3.  import time
4.
5.
6.  DEFAULT_I2C_ADDR = 0x27
7.
8.  i2c = I2C(0,sda=Pin(20),scl=Pin(21),freq=400000)
9.  lcd = I2cLcd(i2c, DEFAULT_I2C_ADDR, 2, 16)
10.
11. if __name__ == '__main__':
12.     try:
13.         lcd.clear()
14.         #lcd.putstr("Hello World! \nRaspberryPi Pico")
15.         lcd.putstr("Hello World! ")
16.         lcd.putstr("\n")
17.         lcd.putstr("RaspberryPi Pico")
18.         time.sleep(2)
19.         #lcd.clear()
20.     except KeyboardInterrupt:
21.         #lcd.clear()
22.         #lcd.backlight_off()
23.         pass
```

8.5 What's Next?

THANK YOU for participating in this learning experience!

If you find errors, omissions or you have suggestions and/or questions about this Lesson, please feel free to contact us: cokoino@outlook.com

We will make every effort to make changes and correct errors as soon as feasibly possible and publish a revised version.

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